REMARKS UNDER 37 CFR § 1.111

Formal Matters

Claims 1, 5-7, 10-13 and 41-60 are pending after entry of the amendments set forth herein.

Claims 1, 5-7, 10-13 and 41-55 were examined. Claims 1, 5-7, 10-13 and 41-55 were rejected.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

The Telephone Interview

Applicants wish to extend their appreciation to the Examiner for the courtesy provided to Applicants' representative during the telephone interview of October 5, 2006. During the Interview, it was agreed that Cattell, U.S. Patent No. 6,180,351 does not provide the capability to provide different test requests for the same array, wherein different sub-arrays are read or processed from the same array in response to different test requests. Applicants argued that Zhou et al. does not provide a test request for reading or processing signal data from a sub-array of probes on a chemical array, since Zhou et al. discloses a method of determining feature locations on an array image obtained from reading a chemical array. The Examiner indicated that her position is that Zhou et al. is processing the data for the sub-array instructed by a retrieved instruction.

With regard to the rejections under 35 U.S.C. Section 101, and 35 U.S.C. Section 112, first paragraph, the Examiner argued that outputting the read or processed signal data is concrete and tangible, but not useful.

This account is believed to be a complete and accurate summary of the interview as required by 37 C.F.R. § 1.133. If the Examiner believes that this summary is inaccurate or incomplete, Applicants respectfully request that the Examiner point out any deficiencies in her next communication so that Applicants can amend or supplement the interview summary.

The Office Action

Claims Rejected Under 35 U.S.C. Section 101

In the Official Action of July 14, 2006, claims 1, 5-7, 10-13 and 41-55 were rejected under 35 U.S.C. Section 101 as being directed to non-statutory subject matter. Although Applicants do not agree with this ground of rejection, and do not acquiesce thereto, Applicants have nevertheless amended claim 1 above. Claim 1, as amended, further recites outputting results from said reading or processing for use by a user. It is respectfully submitted that this is a useful, concrete and tangible result, as a user can uses this results to inform the user as to whether a patient from which a sample was taken to apply to the chemical array, likely does or does not have a specific condition tested for. New dependent claim 58 has also been submitted above to depend from claim 1 and further specify some examples of conditions that may be reported on.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 5-7, 10-13 and 41-55 under 35 U.S.C. Section 101 as being directed to non-statutory subject matter, as being no longer appropriate.

Claims 1, 5-7, 10-13 and 41-55 were rejected under 35 U.S.C. Section 101 as lacking patentable utility. The Examiner asserted that the result of the claimed method is random signal data, which does not have any patentable utility. Applicants respectfully disagree, since the claims never recited "randomly" obtaining signal data. Rather, specific data is obtained as determined from instructions that are selected by or linked to a particular test that is requested. Further, Applicants have amended claim 1 above to recite outputting results from said reading or processing for use by a user. It is respectfully submitted that these results are not random, but are useful, thereby showing patentable utility. For example, page 13, lines 14-17 of the specification indicate that a result may be a statement that an organism from which a sample was derived and which sample was exposed to the array, likely does or does not exhibit a particular condition (for example, a disease, presence of a pathogen, particular genetic deficiency, and the like).

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 5-7, 10-13 and 41-55 under 35 U.S.C. Section 101 as lacking patentable utility, as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 112, First Paragraph

Claims 1, 5-7, 10-13 and 41-55 were rejected under 35 U.S.C. Section 112, first paragraph as not supported by either a specific, substantial and useful asserted utility or a well established utility for the reasons set forth above (presumably referencing the statements made with regard to the rejection under 35 U.S.C. Section 101, for lack of patentable utility). In view of the amendments of claim 1 above, and the remarks made above with regard to the rejection of the claims under 35 U.S.C. Section 101 for lack o of patentable utility, Applicants respectfully submit that this ground of rejection has been overcome.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 5-7, 10-13 and 41-55 under 35 U.S.C. Section 112, first paragraph as not supported by either a specific, substantial and useful asserted utility or a well established utility, as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 112, Second Paragraph

Claims 1, 5-7, 10-13 and 41-55 were rejected under 35 U.S.C. Section 112, second paragraph as being indefinite. In regard to claim 1, line 3, "the chemical array" has been changed to –a chemical array--.

With regard to the step of "reading...signal data for the sub-array instructed by the retrieved instruction", the Examiner indicated that it was not clear what is instructed by the retrieved instruction, i.e., whether the "reading" is instructed, or the "sub-array" is instructed. In response thereto, claim 1 has been amended to further recite in the previous step, that at least two of said instructions instruct processing or reading different sub-array patterns, relative to one another, with regard to the same chemical array. Thus, the instructions instruct processing or reading, and include instructions for which features on the array are to be processed or read.

With regard to claim 6, "a sub-array" has been changed to –the sub-array--.

The rejections of claims 7 and 10 are believed to be no longer appropriate in view of the above amendment of claim 6.

With regard to claim 12, claim 12 has been amended to recite transmitting results from acquired signal data from only those array feature locations within the received sub-array pattern, wherein those array feature locations are identified by applying the received sub-array pattern to the chemical array. Thus results are transmitted only from those array feature locations where the reading or processing was instructed. It is respectfully submitted that the phrase at the end of the claim has been clarified by

specifying that the array feature locations are identified by applying the sub-array pattern to the chemical array.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 5-7, 10-13 and 41-55 under 35 U.S.C. Section 112, second paragraph as being indefinite, as being no longer appropriate.

Claims Rejected Under 35 U.S.C. Section 102(b) (Cattell)

Claims 1, 6-7, 10-13, 41, 44-45 and 47-52 were rejected under 35 U.S.C. Section 102(b) as being anticipated by Cattell, U.S. Patent No. 6,180,351. In the response to arguments section of the Office Action on pages 8-9, the Examiner asserted that Cattell discloses array layout information, e.g., for feature "12" on Fig. 1. It is respectfully submitted that reference numeral "12" in Fig. 1 refers to an array, not a feature – see column 7, lines 37-38.

Further, each array 12 of Cattell contains features 16, see column 7, lines 47-50. Accordingly, it is respectfully submitted that the Examiner's reference to element 12 as a "feature" is inaccurate and confuses the issues, since the terms "array" and "feature" are clearly defined in both the present application and in the Cattell reference, and do not conflict with one another. Further, these are terms of art that would be readily understood by one of ordinary skill in the art.

The Examiner's argument that addresses that are scanned or not scanned represent a sub-array is not understood. Whether a feature is scanned or not is invariant, since only one array layout information is provided per array in the disclosure of Cattell, and thus, only one pattern of features can be read or processed.

The Examiner asserted that Cattell discloses processing a sub-array and receiving instructions stored in a memory with different test requests. This disclosure was not found in Cattell by Applicants and Applicants respectfully request the location, column and lines of Cattell that are considered by the Examiner to disclose such.

The Examiner asserted that specific array addresses that are not interrogated or addresses to be ignored represent an array identifier for a given test. This comment is also not understood. Cattell specifically states that there is a local identifier 356 present on the array substrate in association with the corresponding array. There is a corresponding unique identifier generated by processor 162 for the array layout information stored in memory that corresponds to the array identified by the unique identifier 356, see column 10, lines 45-56 and column 12, lines 18-20. Thus, there is only one unique

identifier associated with the array layout, whether the features are interrogated or not interrogated.

The Examiner asserted that features "12" on the array of fig. 1 may have different layout instructions to read different array addresses. The Examiner referred to column 12, lines 18-35. However, Applicants respectfully submit that Cattell is consistent throughout the patent in noting that only one array layout per array is provided. An array layout pertains to an array 12, and it is respectfully submitted that it is inappropriate to refer to the array 12 of Cattell as a feature.

Thus, only one array or subarray can be read or processed per chemical array, using Cattell's teachings. Claim 1 has been amended above, to further clarify that at least two of the stored instructions instruct processing or reading different sub-arrays from the same chemical array. Cattell does not disclose this and does not inherently possess this.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 6-7, 10-13, 41, 44-45 and 47-52 under 35 U.S.C. Section 102(b) as being anticipated by Cattell, U.S. Patent No. 6,180,351, as being clearly inappropriate.

Claims Rejected Under 35 U.S.C. Section 102(e) (Zhou et al.)

Claims 1, 5-7, 10-13, 41, 44-45 and 47-52 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Zhou et al., U.S. Patent Publication No. 2004/0218795. The Examiner asserted that Zhou et al. discloses a method of determining feature locations on an array image, and that a test request in the form of a user selected array and sub-array-layout information is performed. The Examiner further asserted that the method of Zhou et al.. retrieves different instructions for reading sub-arrays from a memory and reading sub-arrays ([0039]-[0042] and [0052]-[0056] and Figs. 4-8).

Applicants have amended claim 1 above, in addition to those features already discussed above to further recite that any sub-array pattern, whether comprising a continuous set of features or a non-continuous set of features is instructable. Support for this amendment can be found in the specification at page 9, lines 8-16. It is respectfully submitted that Zhou et al. is provided only to view subsets, or subarrays of an array image. Any subarray viewed is a rectilinear, contiguous block of features, see paragraph [0024] and Figs. 6-8. Accordingly, it is respectfully submitted that Zhou et al. fails to anticipate claim 1 and claims depending therefrom for at least this reason.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 5-7, 10-13, 41, 44-45 and 47-52 under 35 U.S.C. Section 102(e) as being anticipated by Zhou et al., U.S. Patent Publication No. 2004/0218795, as being

inappropriate.

Claims Rejected Under 35 U.S.C. Section 103(a) (Zhou et al. in view of Venkatesan)

Claims 42-43, 46 and 53-55 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Zhou et al., U.S. Patent Publication No. 2004/0218795 in view of Venkatesan, U.S. Patent No. 6,282,550. The Examiner asserted that Zhou et al. discloses all of the features of claims 1, 5-7, 10-13, 41, 44-45 and 47-52, for reasons provided in the ground of rejection above, but Zhou et al. does not disclose steps of providing account information, transmitting account information and providing a requestor with the test price.

The Examiner asserted that Venkatesan discloses a method of providing information to a customer requesting a synthesis of primers, and that it would have been obvious to modify the method of Zhou et al. to communicate pricing information to and from a customer ordering a product, to provide an efficient and less time consuming process of buying a biological product.

Applicants respectfully traverse. Zhou et al. does not disclose ordering or buying of biological information. Thus, there would have been no suggestion to modify the methods of Zhou et al. with the account information teachings of Venkatesan, absent the hindsight achieved from reading the present specification and claims. Further, Venkatesan describes a process for correlating customer request and suppliers' capabilities for custom synthesis of polymers, and thus also lacks any teaching or disclosure of the features that have been noted to be lacking in Zhou et al. above.

Accordingly, in view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 42-43, 46 and 53-55 under 35 U.S.C. Section 103(a) as being unpatentable over Zhou et al., U.S. Patent Publication No. 2004/0218795 in view of Venkatesan, U.S. Patent No. 6,282,550., as being inappropriate.

New Claims

New claims 56-60 have been presented above. It is respectfully submitted that these claims also patentably define over the art of record.

New claims 56-58 depend from claim 1 and, it is respectfully submitted, are therefore allowable for at least the same reasons provided above with regard to claim 1. Further, claim 56 recites that said outputting comprises presenting said read or processed data on a display for viewing by a human user.

Claim 57 further recites that the test request is selected from the group of test requests consisting of: tests for expression levels of one or more genes or a class of genes; tests for gene polymorphisms, tests for copy numbers of one or more genes or a class of genes; tests for the presence of a pathogen; and tests for a disease condition of an organism from which a sample exposed to the chemical array was derived; testing a sample to ascertain whether it contains one or more predefined components, either quantitatively or qualitatively, none of which are disclosed by the art of record.

Claim 58 further recites that said result indicates whether a sample that was exposed to the chemical array likely does or does not exhibit a particular condition selected from the group consisting of: a disease, presence of a pathogen and a particular genetic deficiency. This is also not disclosed in the references of record.

New independent claim 59 recites a method comprising: providing a test request for reading signal data from a sub-array of probes on a chemical array, wherein the test request references a type of test to be performed; retrieving an instruction from a plurality of instructions stored in a memory, wherein different instructions for reading signal data from the chemical array, corresponding to different test requests are stored in the memory, each instruction retrievable with a different test request, based on the test request provided and wherein at least two of said instructions instruct processing or reading a sub-array pattern, different from the other, from the same chemical array; reading the signal data, for the sub-array instructed by the retrieved instruction; and outputting results from said reading for use by a user. This method is neither disclosed nor suggested by the art of record.

New independent claim 60 recites a method comprising: providing a test request for reading or processing a sub-array of probes on a chemical array, wherein the test request references a type of test to be performed; retrieving an instruction from a plurality of instructions stored in a memory, wherein different instructions for reading or processing signal data from the chemical array, corresponding to different test requests are stored in the memory, each instruction retrievable with a different test request, based on the test request provided and wherein at least two of said instructions instruct processing or reading a sub-array pattern, different from the other, from the same chemical array; reading signal data, for the sub-array instructed by the retrieved instruction or exposing the sub-array to a sample; and outputting results from said reading for use by a user or providing the exposed array. It is respectfully submitted that none of the art of record discloses or suggests this method.

Conclusion

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10021295-1.

Respectfully submitted,

Date: 10/3/06

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